

SIMPLIFIED NOISE SUPPRESSION CIRCUIT

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ABSTRACT OF THE DISCLOSURE

A system for reducing noise in an acoustical signal is provided. The system comprises a sampler (104) for obtaining discrete samples of the acoustical signal, an analog to digital converter (106) coupled to the sampler (104) and operable to convert the analog discrete samples into a digitized sample, and a noise suppression circuit (108) coupled to the analog to digital converter (106). The noise suppression circuit (108) reduces noise by first receiving the analog discrete samples and then selecting a fixed number of samples. These samples are multiplied by a windowing function and the fast Fourier transform of the windowed samples is computed to yield transformed windowed signals. Half of the transformed windowed signals are selected and a power estimate of the transformed windowed signals is calculated. Next, a smoothed power estimate is calculated by smoothing the power estimate over time and a noise estimate is calculated. The noise estimate and the smoothed power estimate is used to calculate a gain function. A transformed speech signal is obtained by multiplying the gain function with the transformed windowed signal. Then, the inversed fast Fourier transform of the transformed speech signal is calculated to yield a sampled speech signal and the sampled speech signal is added to a portion of the speech signal of a previous frame.